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EXAMINER

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Paper No. 16

Application Number: 09/106,784  
Filing Date: 29 June 1998  
Appellant(s): Pednault

Sean M. McGinn  
For Appellant

EXAMINER'S ANSWER

MAILED  
JUL 17 2001  
Technology Center 2100

This is in response to Appellant's brief on appeal filed on 9 May 2001.

**(1) Real Party in Interest**

A statement identifying the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

A statement identifying the related appeals and interferences which will directly affect

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or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The Appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

The Appellant's statement of the grouping of claims is incorrect. Appellant states that the claims "do not stand or fall together." (Appellant's Brief, page 5; emphasis in original.)

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Pages 5-40 of Appellant's Brief argue the patentability of independent claim 1. Regarding claims 2-20, Appellant's Brief states on page 40 that the "dependent claims recite additional elements clearly providing useful, concrete, and tangible results," and pages 40-41 recite the text of claims 2-4.

Appellant's statement that the "dependent claims recite additional elements clearly providing useful, concrete, and tangible results" is conclusory and fails to provide the argument needed to establish patentability for each of claims 2-20. Therefore, the claims stand or fall together based on the patentability of independent claim 1.

**(8) *ClaimsAppealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

No prior art of record has been relied upon in the rejection of claims under appeal.

**(10) *Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-20 are rejected under 35 U.S.C. 101 as being directed to an abstract idea failing to recite a practical application having useful, concrete, and tangible result.

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The detailed grounds of rejection for claim 1 is provided below, grouping claims 1-20 together as discussed above.

Regarding claim 1, the steps in claim 1 do not: (1) recite data gathering limitations or post-mathematical operations that might independently limit the claims beyond the performance of a mathematical operation; or (2) limit the use of the output to a practical application providing a useful, concrete, and tangible result. Appellant's claim 1 describes a mathematical algorithm using abstract numbers to construct a predictive model that outputs a "specification" and a "prediction" that are also abstract numbers.

It should be noted claim 1 is directed at a "program storage device readable by a machine" and that the prior rejections of claims 1-20 contain an analysis using the "Examination Guidelines for Computer-Related Inventions" previously published in the Federal Register. The Examination Guidelines specified that if a product claim encompasses every computer implementation of a process, when read in light of the specification, it should be examined on the basis of the underlying process. See In re Iwahashi, 12 USPQ2d 1908, 1911-12 (Fed. Cir. 1989), and In re Alappat, 31 USPQ2d 1545, 1558 n.24 (Fed. Cir. 1994).

To the extent that the Federal Circuit court cases (1) State Street Bank & Trust Co. v. Signature Financial Group Inc., and (2) AT&T Corp. v. Excel Communications Inc., may supercede the Guidelines, the reference to the Guidelines is withdrawn. The previous rejections of claims 1-20 was made using an analysis under these applicable Federal Circuit

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court cases, as described below.

A review of the claims analyzed by the Federal Circuit in:

- (1) In re Alappat, 31 USPQ2d 1545 (Fed. Cir. 1994);
- (2) State Street Bank & Trust Co. v. Signature Financial Group Inc., 47 USPQ2d 1596 (Fed. Cir. 1998); and
- (3) AT&T Corp. v. Excel Communications Inc., 50 USPQ2d 1447 (Fed. Cir. 1999),

demonstrate the differences between claims held statutory under 35 U.S.C. § 101 and claims 1-20 submitted by Appellant.

In Alappat, Claim 15 was directed at a “rasterizer for converting vector list data” and included means for “outputting illumination intensity data as a predetermined function.” 31 USPQ at 1553.

The Federal Circuit held the claim as reciting “a specific machine” that produced “a useful, concrete, and tangible result.” 31 USPQ2d at 1557. Appellant’s claims contain no similar limitation to a useful, concrete, and tangible result.

In State Street, Claim 1 was directed at a “data processing system for managing a financial services configuration” and included means for processing daily asset value data and means for “allocating the percentage share that each fund holds”. 47 USPQ 2d at 1599.

The Federal Circuit held that the transformation of data representing dollar

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amounts into a final share price, produced a “useful, concrete, and tangible result.” 47 USPQ at 1601. Appellant’s claims contain no similar limitation to a useful, concrete, and tangible result.

In AT&T v. Excel, Claim 1 was directed at a “method for use in a telecommunications system in which interexchange calls initiated by each subscriber are automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber”, and included steps of “generating a message record for an interexchange call” and including a primary interexchange indicator in each generated message record. 50 USPQ2d at 1449.

The Federal Circuit held the claim produced a “useful, concrete, and tangible result.” 50 USPQ 1452. Appellant’s claims contain no similar limitation to a useful, concrete, and tangible result.

#### ***(11) Response to Argument***

##### **Appellant’s Arguments**

Appellant argues that the Examiner’s rejection is flawed both as a matter of fact and as a matter of law.

The principal factual flaw argued by Appellant is that the Examiner ignores that Step 5 of Claim 1 recites useful, concrete, and tangible results. See Appellant’s Brief, page 18.

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Appellant then argues that the claims need not be limited to a practical application in order for the results to be useful. See Appellant's Brief, pages 20-36, cataloging numerous patents and computer programs that Appellant believes are useful.

Appellant finally argues that the Examiner's rejection is flawed as a matter of law because the standard used in the rejections is improper when compared to AT&T v. Excel and State Street; according to Appellant, "Patentability under 35 U.S.C. §101 requires a determination of whether a useful, concrete, and tangible result is accomplished by the claimed features." Appellant's Brief, page 37 (emphasis in original).

#### Response to Appellant's Arguments

##### 1. The Claimed Invention is Directed to an Abstract Idea Akin to *In re Warmerdam*

Appellant's arguments fail to demonstrate how the claimed invention provides a useful, concrete, and tangible result, because the claimed invention is directed at providing a "specification" and a "prediction" that are an abstract result of performing a mathematical algorithm corresponding to an abstract idea. Appellant's claimed invention is distinguishable from the claims considered in both AT&T v. Excel and State Street because Appellant's claimed invention produces an abstract number that is not applied in a useful manner. In this

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situation, Appellant's claimed invention is strikingly similar to the method claims held to be non-statutory in In re Warmerdam, 31 USPQ2d 1754 (Fed. Cir. 1994).

In Warmerdam, the court held that the following claim nonstatutory under Section 101:

1. A method for generating a data structure which represents the shape of [sic] physical object in a position and/or motion control machine as a hierarchy of bubbles, comprising the steps of:

first locating the medial axis of the object and  
then creating a hierarchy of bubbles on the medial axis.

In finding this claim non-statutory, the court held that:

As a whole, the claim involves no more than the manipulation of abstract ideas. . . . It is true, particularly with ideas expressed in mathematical form, that if a claim requires more than the manipulation of idea so that the process described in the claim produces something quite different, then the process might indeed describe statutory subject matter. The problem with Warmerdam's argument is that the claims here do not have that effect. It is the claims which define the metes and bounds of the invention entitled to the protection of the patent system.

Warmerdam at 1759 (emphasis added).

Appellant's claim 1 is similar to claim 1 of Warmerdam in that both claims recite a mathematical algorithm that manipulates an abstract idea (a set of numbers) to produce another

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abstract idea (a “bubble” data structure in Warmerdam or a “specification” and “prediction” as in Appellant’s claimed invention).

Significantly, the court in AT&T v. Excel acknowledged the validity of the “abstract idea” rule of Warmerdam:

Finally, the decision in *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994) is not to the contrary. There the court recognized the difficulty in knowing exactly what a mathematical algorithm is, “which makes rather dicey the determination of whether the claim as a whole is no more than that.” Id. at 1359, 31 USPQ2d at 1758. Warmerdam’s claims 1-4 encompassed a method for controlling the motion of objects and machines to avoid collision with other moving or fixed objects by generating bubble hierarchies through the use of a particular mathematical procedure. See id. at 1356, 31 USPQ2d at 1755-56. The court found that the claimed process did nothing more than manipulate basic mathematical constructs and concluded that "taking several abstract ideas and manipulating them together adds nothing to the basic equation"; hence, the court held that the claims were properly rejected under Section 101. Id. at 1360, 31 USPQ2d at 1759. Whether one agrees with the court’s conclusion on the facts, the holding of the case is a straightforward application of the basic principle that mere laws of nature, natural phenomena, and abstract ideas are not within the categories of inventions or discoveries that may be patented under Section 101.

AT&T v. Excel at page 1453 (emphasis added).

Therefore, a determination here that Appellant’s claimed method consists of manipulating abstract ideas does not contradict the holdings of either AT&T v. Excel or State

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Street.

2. Appellant's Specification is Similarly Directed to the Manipulation of Abstract Ideas

Appellant argues that “the claimed invention, taken as a whole, does in fact produce a useful, concrete, and tangible result: namely, a predictive model that can be used to make predictions even when the values of some or all of its inputs are missing or are otherwise unknown.” Appellant’s Brief, page 22 (emphasis in original). As discussed above, the claimed invention is directed at performing a set of mathematical steps upon abstract data resulting in an abstract result.

Even if the directive of Warmerdam is ignored, and one looks outside the “metes and bounds” of the claims to find a useful, concrete, and tangible result, Appellant’s claimed invention lacks terms that relate back to the Specification in a manner permitting a practical application or a useful result to be read into the claim.

Appellant’s Specification is written in a manner emphasizing the abstract nature of Appellant’s predictive modelling techniques. Approximately 20 lines of text on pages 1 and 2 of the Specification discuss the use of predictive models in direct mail targeting purposes. Clearly Appellant has identified a potential practical application for the subject matter of Appellant’s invention.

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But the remainder of Appellant's Specification is devoid of any connection between this potential practical application and Appellant's claimed invention. Instead of describing his claimed invention with respect to performing direct mail targeting, Appellant provides an illustrative embodiment directed at choosing a set of abstract statistical models based on abstract data. See Specification pages 11-14, and Figs. 1 and 2. Even if Appellant's claimed invention was directed to forming predictive models for use in direct mail targeting, it is unclear whether Appellant's Specification would be enabling for that practical application given the abstract nature of Appellant's illustrated embodiment. Appellant's illustrative embodiment may serve pedagogical purposes but it provides no connection to a practical application that could possibly be read into the claimed invention.

### 3. Conclusion

Appellant's claimed invention lacks a practical application providing a useful, concrete, and tangible result because it is directed to an abstract idea. The claimed invention receives abstract input data, performs mathematical operations, and outputs abstract data. The claimed invention meets the Warmerdam criteria as the manipulation of abstract ideas, and neither the claims nor the Specification provide a practical application having a useful, concrete, and tangible result as required by State Street or AT&T v. Excel.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



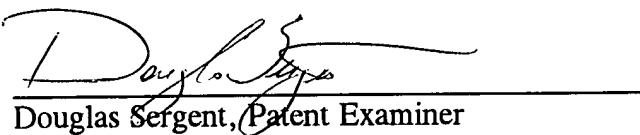
Samuel Broda  
July 12, 2001

Record of Appeals Conference:



Kevin Teska, Supervisory Patent Examiner

7/12/01  
Date



Douglas Sergent, Patent Examiner

7/12/01  
Date

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